AMENDMENTS TO THE CLAIMS

Claim 1. (Currently Amended)

A communication apparatus comprising a turbo encoder, wherein said turbo encoder includes a rearrangement unit which,

~~generates N types of random series by arranging random series generated by using prime numbers in a buffer of N (where N is a natural number) rows x M (where M is a natural number) columns and rearranging bits in rows by using the random series;~~

generates a random series of M bits by using prime numbers, rearranges bits in the random series and writes the random series in each of N rows x M columns, where N and M are natural numbers, to thereby generate N random series, wherein the bits in each of the N rows are rearranged in such a manner that non-identical bits are placed in same column of adjacent rows;

maps ~~interleaver-length~~ a data series of interleaver-length on the rearranged N random series to thereby generate N mapped random series in the buffer;

~~generates a final rearrangement pattern by replacing rows in the mapped data series in accordance with a predetermined rule;~~

rearranges, in accordance with a predetermined rule, positions of the N mapped random series in the buffer; and

reads ~~the generated rearrangement pattern in~~ data along the columns of the buffer.

Claim 2. (Currently Amended)

The communication apparatus according to claim 1, wherein when two information bit series are input into said turbo encoder, said rearrangement unit rearranges the two information bit series so that ~~the inter-signal point~~ hamming distances of the two information bit series do not become 0.

Claim 3. (Currently Amended)

A communication apparatus comprising a turbo encoder, wherein said turbo encoder includes a rearrangement unit which,

~~generates N types of random series by arranging random series generated by using prime numbers in a buffer of N (where N is a natural number) row x M (where M is a natural number) columns and shifting the random series one column by one column in rows;~~

generates a random series of M bits by using prime numbers, rearranges bits in the random series and writes the random series in each of N rows of a buffer of N rows x M columns, where N and M are natural numbers, to thereby generate N random series, wherein the bits in each of the N rows are rearranged in such a manner that a particular bit in a particular row is shifted by one column from the particular bit in an adjacent row of the particular row;

maps ~~interleaver-length~~ a data series of interleaver-length on the ~~shifted N~~

~~types of~~ rearranged N random series to thereby generate N mapped random series in the buffer;

~~generates a final rearrangement pattern by replacing rows in the mapped data series in accordance with a predetermined rule;~~

rearranges, in accordance with a predetermined rule, positions of the N mapped random series in the buffer; and

reads ~~the generated rearrangement patter in~~ data along the columns of the buffer.

Claim 4. (Currently Amended)

The communication apparatus according to claim 3, wherein when two information bit series are input into said turbo encoder, said rearrangement unit rearranges the two information bit series so that ~~inter-signal point~~ hamming distances of the two information bit series do not become 0.

Claim 5. (Currently Amended)

A communication method of rearranging information bit series in a turbo encoder, the method comprising:

a random-series generation step of ~~generating N types of random series by arranging random series generated by using prime numbers in a buffer of N (where N is a natural number) rows x M (where M is a natural number) columns~~

~~and rearranging bits in rows by using the random series generates a random series of M bits by using prime numbers, rearranges bits in the random series and writes the random series in each of N rows x M columns, where N and M are natural numbers, to thereby generate N random series, wherein the bits in each of the N rows are rearranged in such a manner that non-identical bits are placed in same column of adjacent rows;~~

a mapping step of mapping ~~interleaver length~~ a data series of interleaver-length on the rearranged N ~~types of random series~~ random series to thereby generate N mapped random series in the buffer;

~~a rearrangement pattern generation step of generating a final rearrangement pattern by replacing rows in the mapped data series in accordance with a predetermined rule;~~

a rearranging step of rearranging, in accordance with a predetermined rule, positions of the N mapped random series in the buffer; and

a read step of reading ~~the generated rearrangement patter in~~ data along the columns of the buffer.

Claim 6. (Currently Amended)

The communication method according to claim 5, wherein when two information bit series are further input into said turbo encoder, the two information bit series are rearranged so that ~~inter signal point~~ hamming distances

of the two information bit series do not become 0.

Claim 7. (Currently Amended)

A communication method of rearranging information bit series in a turbo encoder, the method comprising:

a random-series generation step of ~~generating N types of random series by arranging random series generated by using prime numbers in a buffer of N (where N is a natural number) rows x M (where M is a natural number) columns and shifting the random series one column by one column in rows;~~ generates a random series of M bits by using prime numbers, rearranges bits in the random series and writes the random series in each of N rows of a buffer of N rows x M columns, where N and M are natural numbers, to thereby generate N random series, wherein the bits in each of the N rows are rearranged in such a manner that a particular bit in a particular row is shifted by one column from the particular bit in an adjacent row of the particular row;

a mapping step of mapping ~~interleaver-length~~ a data series of interleaver-length on the ~~shifted N types of~~ rearranged N random series;

~~a rearrangement-pattern generation step of generating a final rearrangement pattern by replacing rows in the mapped data series in a accordance with a predetermined rule;~~ a rearranging step of rearranging, in accordance with a predetermined rule, positions of the N mapped random series in the buffer; and

a read step of reading ~~the generated rearrangement pattern in~~ data along columns of the buffer.

Claim 8. (Currently Amended)

The communication method according to claim 7, wherein when two information bit series are further input into said turbo encoder, the two information bit series are rearranged so that ~~inter-signal point~~ hamming distances of the two information bit series do not become 0.

AMENDMENTS TO THE DRAWINGS

Attached hereto are six (6) sheets of corrected formal drawings that comply with the provisions of 37 C.F.R. §1.84. The corrected formal drawings incorporate the following drawing changes:

Several typographical errors have been corrected in the substitute drawings sheets provided herewith. Specifically, the word "scalling" has been corrected as "scaling" in Figs. 2 and 3. Further, the word "colum" has been corrected to read "column" in Figs. 12, 16, 17 and 18. Applicants respectfully request approve of the proposed drawing correction and reconsideration and withdrawal of the corresponding drawing objection.

It is respectfully requested that the corrected formal drawings be approved and made a part of the record of the above-identified application.